HEALTH AFFAIRS

Ergonomic Principals and Accommodating Federal Employees with Disabilities

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Computer/Electronic Accommodations Program

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Background

- CAP was established in 1990 as DoD's centrally funded program to provide accommodations
- National Defense Authorization Act
  Assistive Technology Accommodations Program (10 U.S.C. § 1582 SEC. 1102)

  "The Secretary of Defense may provide assistive technology, devices and services…to…any department or agency of the Federal Government…for its employees with disabilities…upon request of the head of the agency."
- Since its inception, CAP has filled over 34,000 requests for accommodation

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CAP Mission

To provide assistive technology and accommodations to ensure people with disabilities have equal access to the information environment and opportunities in the Department of Defense and throughout the Federal Government

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Employment Initiatives

Support Federal goals of employing and retaining persons with disabilities:

- Workforce Recruitment Program
- Workers' Compensation Recipients
- Telework/Flexiplace Program
- Healthy Work Practices Program

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The Scope of Your Challenge

- MSD's as a source of disability cost $254 billion dollars in 1999 Natl. Center for Health Statistics
- RSI's account for 70% of all job-related claims D.O.L. Statistics
- Average cost per claim is $29,000 Natl. Council on Comp. Ins.
- Three-quarters of all jobs require computer use Pascarelli and Quilter
- One-third of all work-related lost workday injuries are from MSD's Natl. Center for Health Statistics

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Office Ergonomics

- Ergonomics is the field of study that seeks to fit the job to the person, rather than the person to the job.
- This process is achieved by the evaluation and design of workplaces, environments, job tasks, equipment, and processes in relationship to human capabilities and interactions in the workplace.

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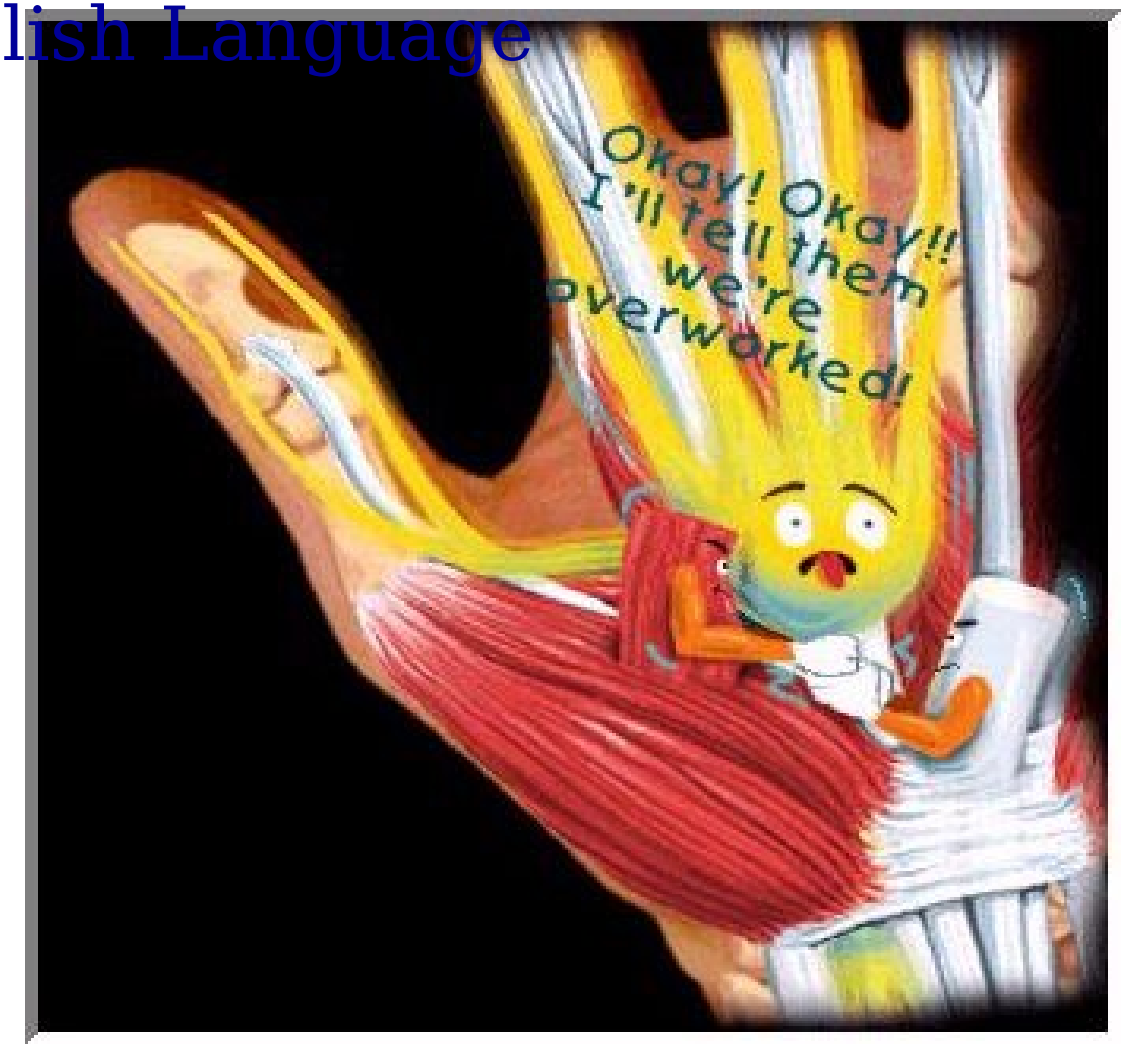
Disability Prevention

The Five Most Dangerous Words in the English Language

MAYBE
IT
WILL
GO
AWAY



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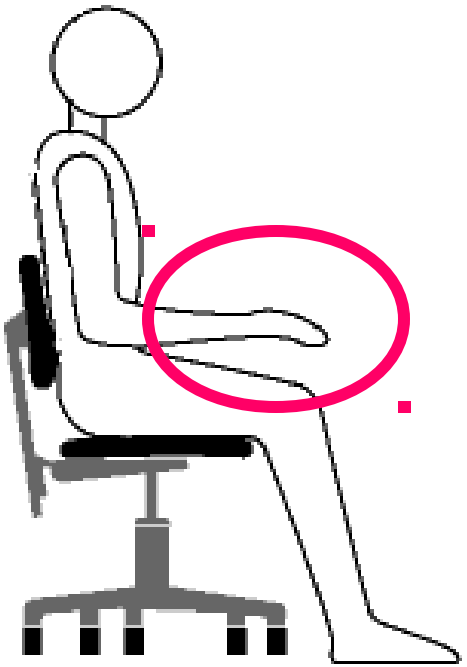
Wrist Pain or ~~Discomfort~~

Possible solution for wrist pain or discomfort include:

- Keep wrists in neutral position by adjusting the keyboard height and angle.
- Ensure keyboard and pointing device are on the same surface.
- Position the keyboard so that the wrists aligned with the forearm to minimize awkward bending from side to side.
- Move the arm rather than overstretch the palm (especially little finger reaches) to access control keys.



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Neck Pain or Discomfort

Possible solution for neck pain or discomfort include:

- Raise/lower the monitor so that the top of the screen is at eye level.
- Raise/lower documents or use a document holder to minimize leaning forward.
- Raise/lower the chair or work height to prevent awkward positions.
- Keep work in the midline of the body to avoid twisting the trunk or neck.

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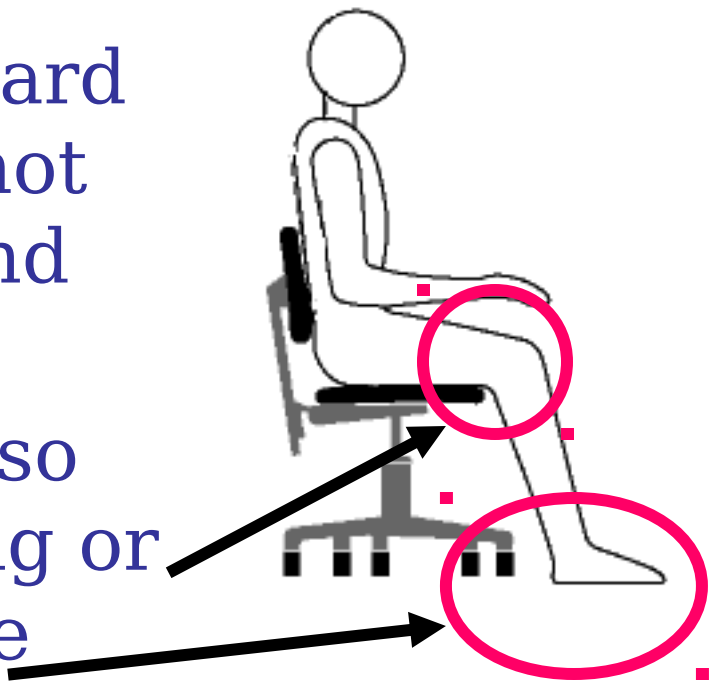
Leg Pain or Discomfort

Possible solution for leg pain or discomfort include:

- Shorten the seat pan or move the backrest forward so that the seat pan is not applying pressure behind the knees.
- Lower the chair height so the legs are not dangling or use a footrest to provide support.



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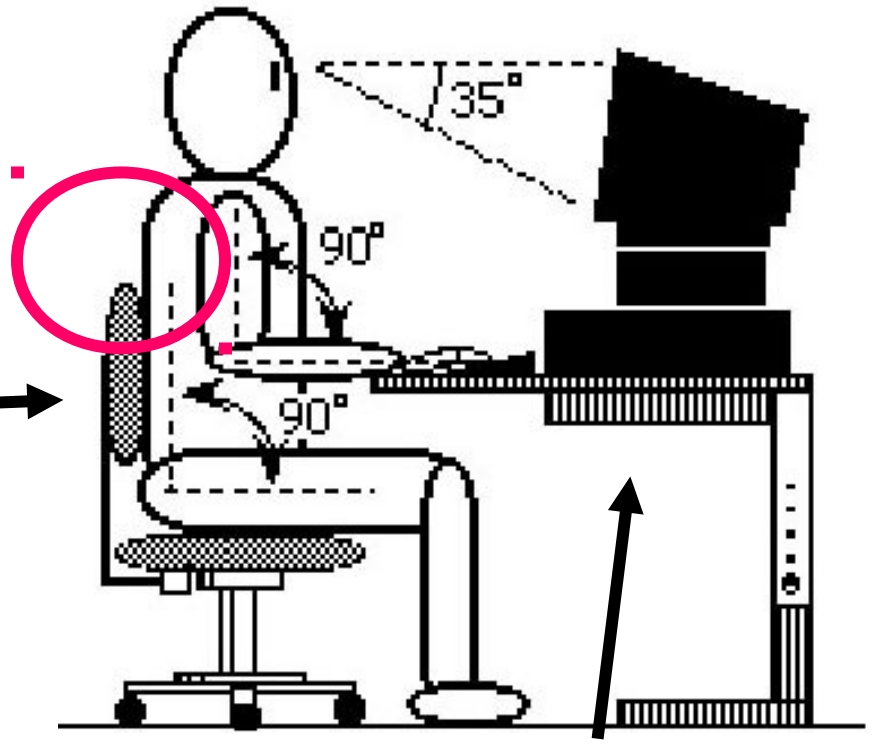
Back and Leg Pain or Discomfort

Possible solution for back pain or discomfort include:

- Back and leg pain or discomfort is usually attributed to posture and the chair used at your
- Adjust the work surface height to minimize excessive arching of the back or slouching



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Back Pain or Discomfort

- Fully adjustable chairs are essential to an ergonomic environment
- Adjust the backrest of the chair to support the low back curve.
- Sit with the buttocks back in the chair rather than on the edge to maximize chair back suppo

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Workstation Review

Body:
Centered in front of the monitor and keyboard

Screen top:
Slightly below eye level

Wrists:
Should not rest!

Forearms:
Level or tilted up slightly

Lower back:
Supported by chair

Legs:
Horizontal

Feet:
Resting flat on the floor or footrest

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Healthy Work Practices Program

Disability Prevention

- Target Audience
  - Employees, supervisors, and employees with disabilities that may develop ergonomic disabilities
- HWPP Information Dissemination
  - Training / workshops
  - CAP Website
  - HWPP Fact Sheet
  - Workplace Ergonomics Reference Guide & Slide Rule
- Needs Assessments and Demonstrations
  - CAP Website Needs Assessment Process
  - Individual/group evaluations
  - CAP Technology Evaluation Center (CAPTEC)

Disability Accommodation

- Target Audience
  - Individuals that have developed a Musculoskeletal Disorder,

    Cumulative Trauma Disorder, Repetitive Stress Injury or

    Carpal Tunnel Syndrome

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eCAP

- Assist Federal agencies in providing assistive technology and services for individuals with disabilities
  - Needs Assessment
  - Accommodation Solution
  - Request Submission
  - Training
  - Customer Care

Accommodation Process

- Overview
- Needs Assessment
- Accommodation Solution
- Request Submission
- Training
- Customer Care

The success of the CAP accommodation process begins with your involvement in the identification of the appropriate accommodation solutions. In order for CAP to expedite your request, follow the five step process: 1) needs assessment, 2) Accommodation Solution, 3) complete and submit the CAP Request Form, 4) identify if training is required and 5) feedback on customer service you received from CAP.

For additional information, go to **CAP Services**.

Needs Assessment

Examine your job requirements and functional capabilities.

Accommo-dation Solution

Assistive technologies and related services that might be right for you.

Request Submission

Now that you have determined a solution, request it here!

Training

Learn how to best use your assistive technology or to arrange other training needs.

Customer Care

Discover how CAP ensures you receive excellent service.

CAP
Enter your E-mail
Submit

Needs Assessment : CAP - Microsoft Internet Explorer provided by HA/TMA

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Address http://www.tricare.osd.mil/cap/acc_proc/acc_proc_needs_assess.cfm

Go

Accommodation Process

- Overview
- Needs Assessment
  - The Job
  - The Individual
- Accommodation Solution
- Request Submission
- Training
- Customer Care

Needs Assessment

Accommodating Persons with Disabilities:
The Needs Assessment Process

Choosing appropriate accommodations is best done on a case-by-case basis. It is important to recognize that people with disabilities have different capabilities and varying degrees of disabling conditions. Accommodation needs must be evaluated in light of a person's job functions and technical environment (e.g., workstation configuration). To ensure that the appropriate accommodations will be provided, a needs assessment should be conducted addressing three areas: The Job, The Individual, and The Solution.

Before you begin the CAP Accommodations Process, please check to see if your Agency has an Assistive Technology Center that could assist you with your needs assessment.

A. The Job **B. The Individual**

Internet

Needs Assessment : The Individual : CAP - Microsoft Internet Explorer provided by HA/TMA

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Address http://www.tricare.osd.mil/cap/acc_proc/acc_proc_dexterity.cfm Go Links

Accommodation Process

Overview
Needs Assessment
The Job
The Individual
Accommodation Solution
Request Submission
Training
Customer Care

STEP 1 | STEP 2 | STEP 3 | STEP 4 | STEP 5

Needs Assessment

The Individual

Dexterity

CAP provides various accommodations for many dexterity disabilities. Some of these disabilities might be avoided if people take a proactive approach when they begin to experience pain or numbness. Neck, back, leg, and wrist pain are the most common complaints, however, disabling conditions can be prevented if they are addressed in the early stages. Review this series of questions to see if you are at risk for developing a disabling condition. Be sure you are positioned at your workstation performing your normal daily tasks when you ask yourself these questions.

Neck pain or discomfort

- Is the monitor adjusted so that the top of the screen is at eye level?
- If documents are referred to, do you have an adequate document holder?

Accommodations : Assistive Technology : CAP - Microsoft Internet Explorer provided by HA/TMA

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Address http://www.tricare.osd.mil/cap/acc_proc/acc_proc_assist_dexterity.cfm

Go Links

Accommodation Process

- Overview
- Needs Assessment
- Accommodation Solution
  - Assistive Technology
  - Interpreters
  - CART Services
  - Readers
  - Personal Assistants
- Request Submission
- Training
- Customer Care

Accommodation Solution

Assistive Technology

Dexterity

Alternative Keyboards and Keyboard Trays: Alternative keyboards can facilitate the use of personal computers. Ergonomic keyboards conform to the shape and movements of the wrist and hands. Ergonomic keyboards reduce the stress that contributes to Repetitive Stress Injuries (RSI) such as Carpal Tunnel Syndrome (CTS) and Cumulative Trauma Disorders (CTD).

Alternative Pointing Devices: Numerous alternative pointing devices are available for use by persons who cannot use a standard mouse. Trackballs, ergonomically designed mice, and touch-pads are substitute pointing devices that require less motion on the user's part and better positioning with respect to the keyboard. Also, the alternative pointing devices may be built into the keyboard.

Ergonomic Chair: CAP also works with DoD Workers' Compensation claimants in the

Internet

Address http://www.tricare.osd.mil/cap/services/services_acc_assist_tech.cfm?TechType=ErgonomicKeyboards Go Links

CAP Services

Overview
Our Customers
People with Disabilities
- Blind/Low Vision
- Cognitive
- Communication
- Deaf/Hard of Hearing
- Dexterity

Government Managers

People with Disabilities

Assistive Technology

Dashboard

Banana-Board

EZ-Touch Lever-Free Keyboard Tray

Keynetix STS (Sit-to-Stand) Keyboard Trays

Microsoft Natural Keyboard Elite

Kinesis Evolution Adjustable Keyboard

Goldtouch AdjustableErgonomic

WAVE 6000 Touchpad Keyboard

Internet

People with Disabilities : ErgonomicKeyboards : CAP - Microsoft Internet Explorer provided by HA/TMA

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Address http://www.tricare.osd.mil/cap/services/services_acc_assist_tech_detail.cfm?TechID=117 Go Links

CAP Services

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People with Disabilities

Dexterity

Assistive Technology - ErgonomicKeyboards

Banana-Board lets you adjust the keyboard tray and mouse pad for optimum comfort without levers, knobs or handles! Simply lift and adjust. Great knee clearance. Fits both straight and corner workstations. Durable ball bearing slide track fits workstations with curved and diagonal corners and straight edges. Keyboard platform adjusts from 10° positive to 15° negative tilt and swivels 360°. Pull-out mouse surface allows both left- and right-handed mousing. Rail on back of mouse surface keeps mouse in place in place with negative tilt. Removable LeatherRite palm support. Black.

go back

Done Internet

Accommodation Process

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STEP 1 | STEP 2 | STEP 3 | STEP 4 | STEP 5

Request Submission

CAP uses a team approach in the request process. We are divided into disability teams - Deaf/Hard of Hearing, Dexterity, and the Blind/Low Vision/Cognitive and Communication team. Once you have completed the needs assessment and/or identified the appropriate accommodation, the CAP Request Form should be submitted to request the solution that is identified. The form is reviewed by the appropriate CAP Team for completeness and compatability of the requested accommodation for a person and/or office environment. Please make sure you address how the accommodation will assist the user or increase access to an office. Additional information or medical documentation may be required. Examples of additional requirements include documentation for assistive technology for ergonomic related injuries or for the need of a larger monitor.

CAP MAILING LIST
Enter your E-ma
Submit

Name of Person or Office to be Accommodated:

First Name:

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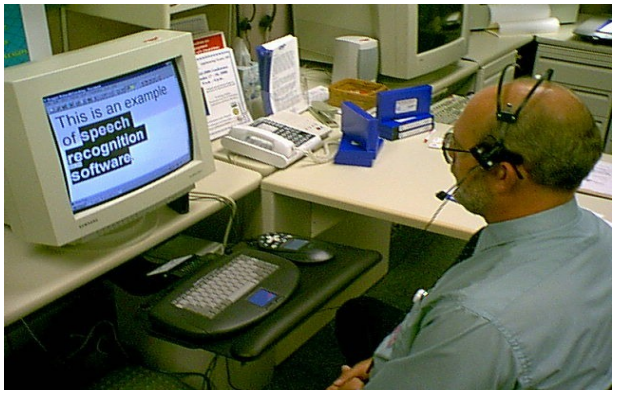
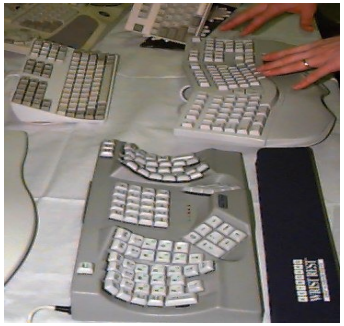
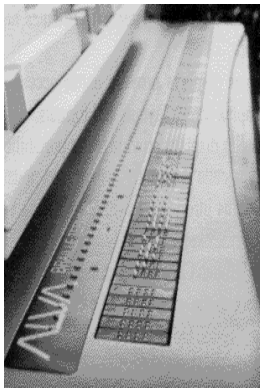
CAP Assistive Technology and Services

- Computer input devices
  - Alternative keyboards, pointing devices, voice recognition systems
- Computer output devices
  - Screen readers, large monitors, Braille terminals
- Telecommunication devices
  - PC-based TTYs
- Assistive listening devices
  - Personal amplification devices, amplified handsets
- Alternative forms of documentation
  - Braille, large print, electronic
- Captioning services
- Other technology and services to facilitate access







Computer Electronic Accommodations Program - Microsoft Internet Explorer provided by HA/TMA

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Address http://www.tricare.osd.mil/cap/ Go Links

Learn what CAP services can do for...

Welcome to CAP! Providing real solutions for real needs to ensure people with disabilities have equal access to the information environment and opportunities in the Department of Defense and throughout the Federal government is our mission. The Department of Defense established the Computer/Electronic Accommodations Program in 1990 to... Learn More

SPOTLIGHT

Developing and Implementing Accessible E-Learning

This event will highlight e-learning, and will include

5th Annual Federal Workers Compensation Conference

Visit CAP in the exhibit hall and attend the presentation *CAP:*

MORE NEWS

- Department of Veterans Affairs Information Technology Conference
- 18th Annual FDR Conference

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CAPTEC

- CAP Technology Evaluation Center (CAPTEC)
- Assist individuals and supervisors in choosing appropriate computer and electronic accommodations
- Wide variety of assistive technology
- VTC Capability
- Located in the Pentagon

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CAP is Accessible

- CAP Office 703-681-8813 (Voice)
  703-681-0881 (TTY)
- Fax 703-681-9075
- CAPTEC 703-693-5160 (Voice)
  703-693-6189 (TTY)
  VTC Capability
- E-mail cap@tma.osd.mil
- WWW www.tricare.osd.mil/cap